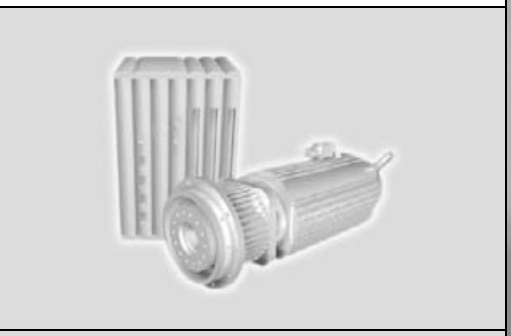
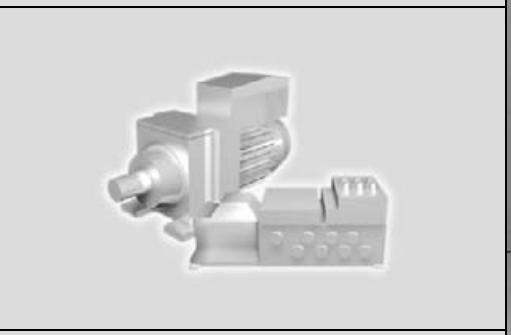
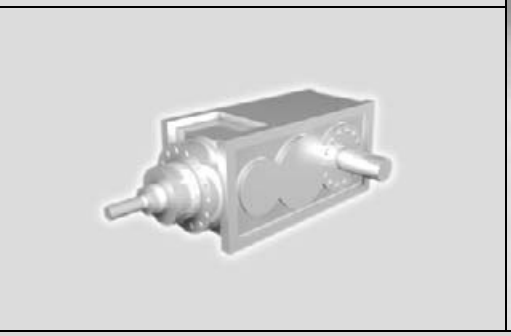
SEW EURODRIVE







MOVITOOLS® - Connection to SIMATIC S7 via Ethernet

GC441000

Edition 09/2005

11351926 / EN

Manual

SEW
EURODRIVE

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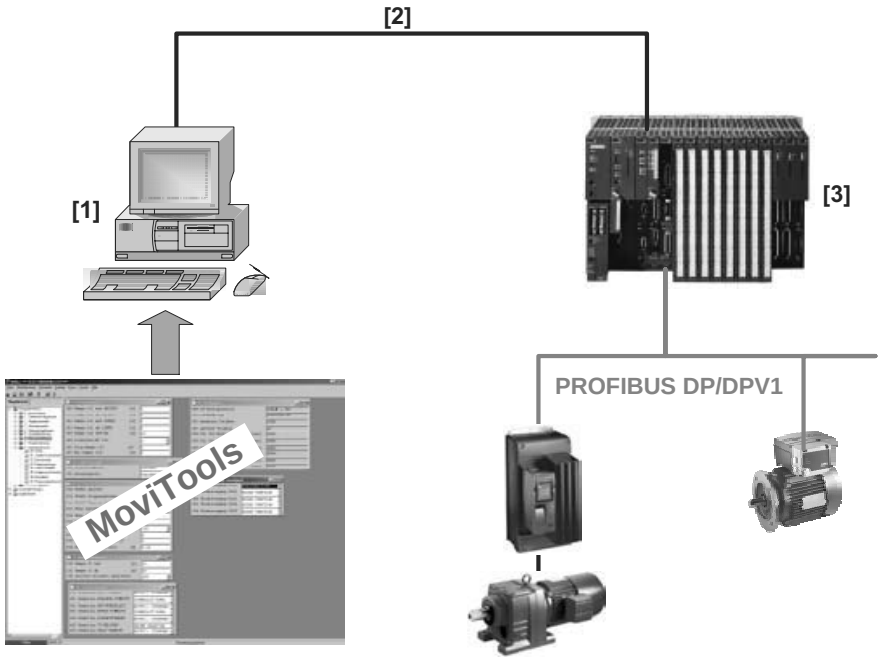
1 System Description

1.1 General information

The MOVITOOLS® program package from SEW-EURODRIVE is used for project planning, diagnostics and programming of all new inverter series from SEW-EURODRIVE. In the most simple scenario, a PC and a drive inverter are connected using the PC's RS-232 interface. MOVITOOLS® lets you operate several drive inverters at the same time. To do this, all inverters must be connected to the PC/notebook via a bus system. This may be done by using the drives' proprietary RS-485 interface or the drives' system bus.

Fieldbuses such as PROFIBUS-DP have established themselves in plant automation systems. Drive inverters are increasingly controlled via fieldbuses. This means the system comes equipped with a bus structure. The high-performance bus interface modules in drive inverters from SEW-EURODRIVE make for the exchange of both cyclical process data for drive control and acyclical parameter data.

MOVITOOLS® via SIMATIC S7 Ethernet lets you operate MOVITOOLS® via PROFIBUS-DP. The parameter requests from MOVITOOLS® are forwarded to an SIMATIC S7 from a PC with Ethernet TCP/IP access. An SEW function block (SEW-FB) directs these parameter requests to the lower-level PROFIBUS-DP and the MOVIDRIVE® drive inverters.



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[1] Standard PC with Ethernet TCP/IP interface

[2] Ethernet TCP/IP connection

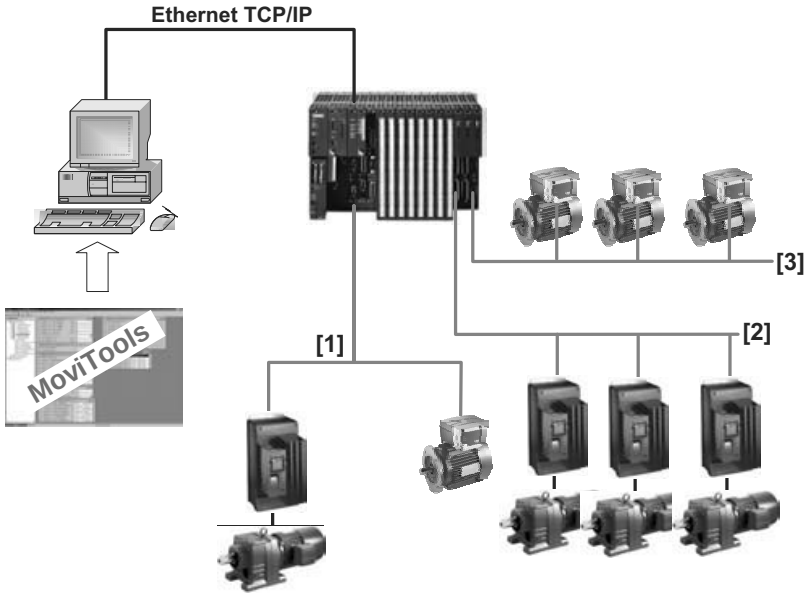
[3] SIMATIC S7 with SEW function block (SEW-FB)

1.2 Supported communication structures

You can set up a communication connection from any PC via Ethernet TCP/IP and PROFIBUS-DP to SEW drive electronics by simply implementing the new SEW function block "SMLP-Server" (SMLP = Simple MOVILINK Protokoll) in a SIMATIC S7.

All information about the communication link is stored in the SIMATIC S7 program. This means any PC with MOVITOOLS® and access to the Ethernet network will be able to access the drive information. The PC does not require any SIMATIC S7 project information.

The communication structure has been designed to give you access to up to three PROFIBUS master systems. A peer-to-peer connection will be established between the SIMATIC S7 and the PC via port 300 (→ following figure).



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[1], [2], [3] PROFIBUS master system 1, 2, 3

2 System Prerequisites

2.1 Overview of Siemens components

MOVITOOLS® communication via S7 Ethernet is available as of MOVITOOLS® version 4.20.

You will need a standard Ethernet card 10/100 Mbit/s for communication of MOVITOOLS® via S7 Ethernet. The TCP/IP protocol will have to be set up in the PC system settings.

Supported Siemens CP components

MOVITOOLS® via S7 Ethernet supports the following Siemens CP components.

MLFB	Designation	Price in €
6GK7343-1EX20-0XE0	CP 343-1	1170
6GK7343-1GX20-0XE0	CP 343-1 IT	1630
6GK7343-1HX00-0XE0	CP 343-1 PN	1630
6GK7443-1EX11-0XE0	CP 443-1	1680
6GK7443-1GX11-0XE0	CP 443-1 IT	2020

2.2 Overview of SEW components

MOVITOOLS® via Ethernet is included in the "MOVITOOLS® – Connection via SIMATIC S7" documentation package. The documentation package includes the following documents:

- CD-ROM "MOVITOOLS® – Connection via SIMATIC S7" with S7 projects including function blocks for "MOVITOOLS® via MPI" and "MOVITOOLS® via Ethernet S7."
- Documentation
- **One** license agreement for use of the function blocks on **one** SIMATIC S7

Part number	Designation	Language
1058 5605	"MOVITOOLS® connection via SIMATIC S7 documentation package	DE = German
1058 5613		EN = English
1058 5621		FR = French

Licensing conditions

SEW-EURODRIVE grants the purchaser the right to download and operate the files (function blocks and data blocks) on exactly **one** SIMATIC S7 control unit.

Each control unit in operation containing the files (function blocks) supplied by SEW-EURODRIVE requires its own license.

If this control unit is defective, the license and files may be transferred to another control unit.

2.3 STEP7 projects

You will have to expand your STEP7 project to operate MOVITOOLS® via Ethernet S7.

The following files are included in the scope of delivery:

SMLP server_... (for SIMATIC S7300 and S7400)

This STEP7 archive includes the following blocks:

- FB31 SMLP server_...
  - AG_RECV (for S7300)
  - AG_SEND (for S7300)
  - AG_LRECV (for S7400)
  - AG_LSEND (for S7400)
- DB52 Instance DB_SFB52
- DB53 Instance DB_SFB53
- DB89 Hardware DB

See section "Configuration" for additional information.

readme_MT_via_S7_Ethernet_d.txt

This file includes additional information.

Create_HardwareDB

Extra tool for creating a hardware data block (→ Section "Program "Create_HardwareDB").

2.4 Limitations in function

MOVITOOLS® applications

You can use all MOVITOOLS® applications with MOVITOOLS® via SIMATIC S7 Ethernet. But the range of functions is limited by the unit itself.

SEW units with parameter settings or configuration via the parameter channel saved in the cyclical process data (DP-V0) do not support long parameter messages (SCOPE and VARDATA messages). SEW gateways (UFP) configured in the same manner do not provide access to lower-level SEW units. SEW units with parameter settings or configuration via the DP-V1 parameter channel are not subject to this limitation.

TCP/IP connections

You will have to set up a communication connection in the PLC for communication of MOVITOOLS® via SIMATIC S7 Ethernet (→ Section "Setting up a TCP/IP connection with STEP7"). This communication connection will have to be a peer-to-peer connection. This means only one PC can use this connection directly.

If several PCs are to have access to this communication connection, you will have to use an "ETH server." You will find additional information on this topic in the MOVITOOLS® and Movilink Switcher online help.

3 PLC Configuration in STEP7

3.1 Setting up a TCP/IP connection with STEP7

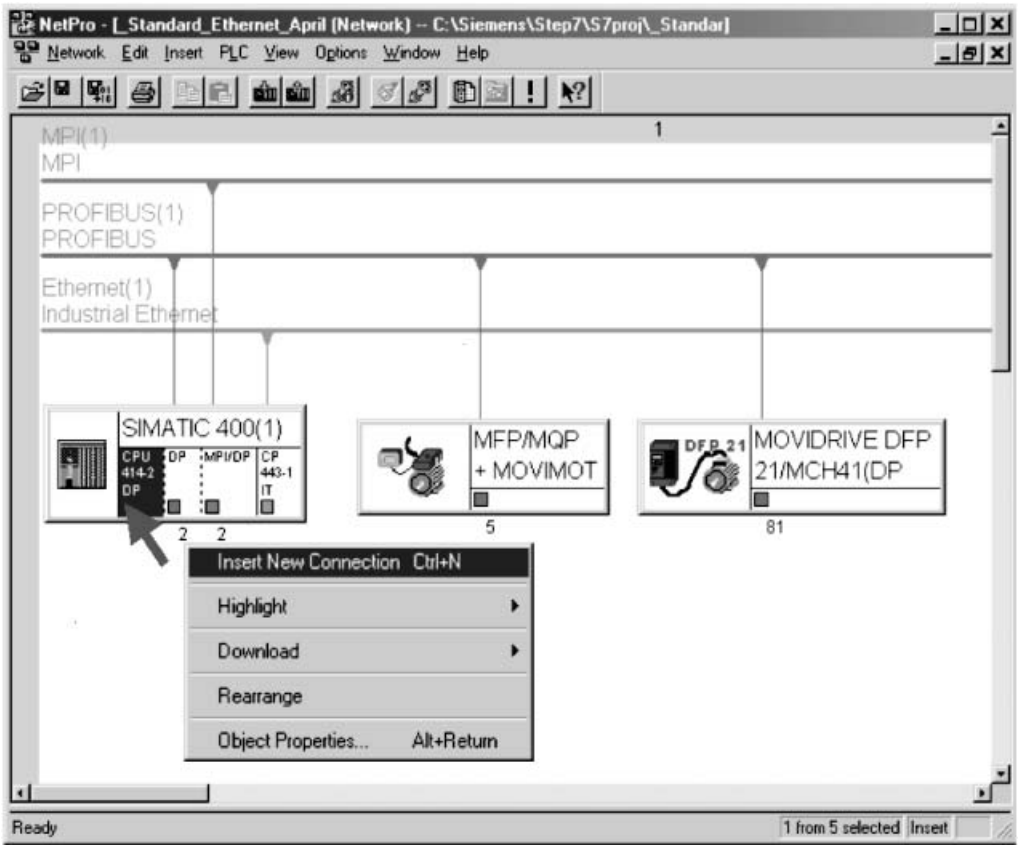
For additional information on setting up a TCP/IP connection in STEP7:

- See the Siemens manual "Startup of SIMATIC NET PC stations - Instructions and quick start for SIMATIC NCM PC / STEP7 as of version V5.2", article ID 13542666.
- See the Siemens manual "SIMATIC NET NCM S7 for Industrial Ethernet", article ID 1172423.

These manuals are available on the Siemens homepage.

You will first have to set up and configure the CP component in the STEP7 hardware manager to establish a TCP/IP connection. You will then have to set up a TCP/IP connection at port 300 in the STEP7 program. Proceed as follows:

1. Open NetPro.
2. Mark the entry "CPU414+2DP" in the "SIMATIC 400(1)" station . Now click the right mouse button and select the menu item [Insert New Connection.]



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3. The "Insert New Connection" window will open.

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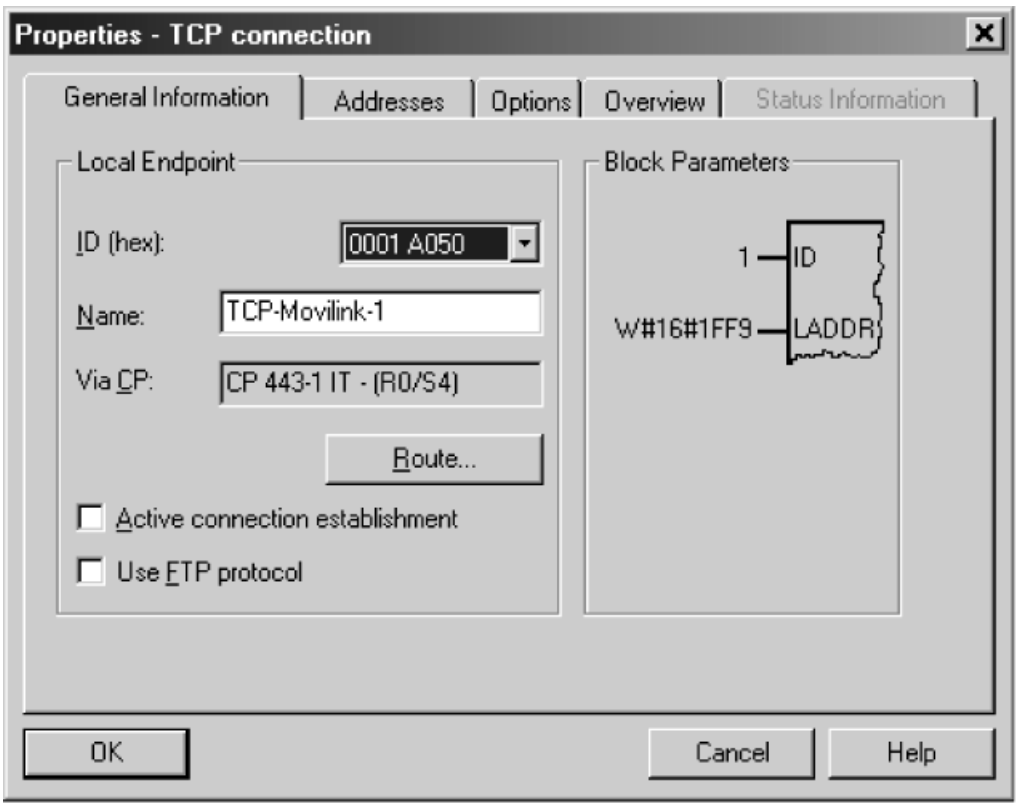
4. Select the entry "TCP connection" from the "Connection" group in the dropdown menu "Type." Next, click <OK>.
5. The window "Properties - TCP connection" will open. Choose the tab "General Information."



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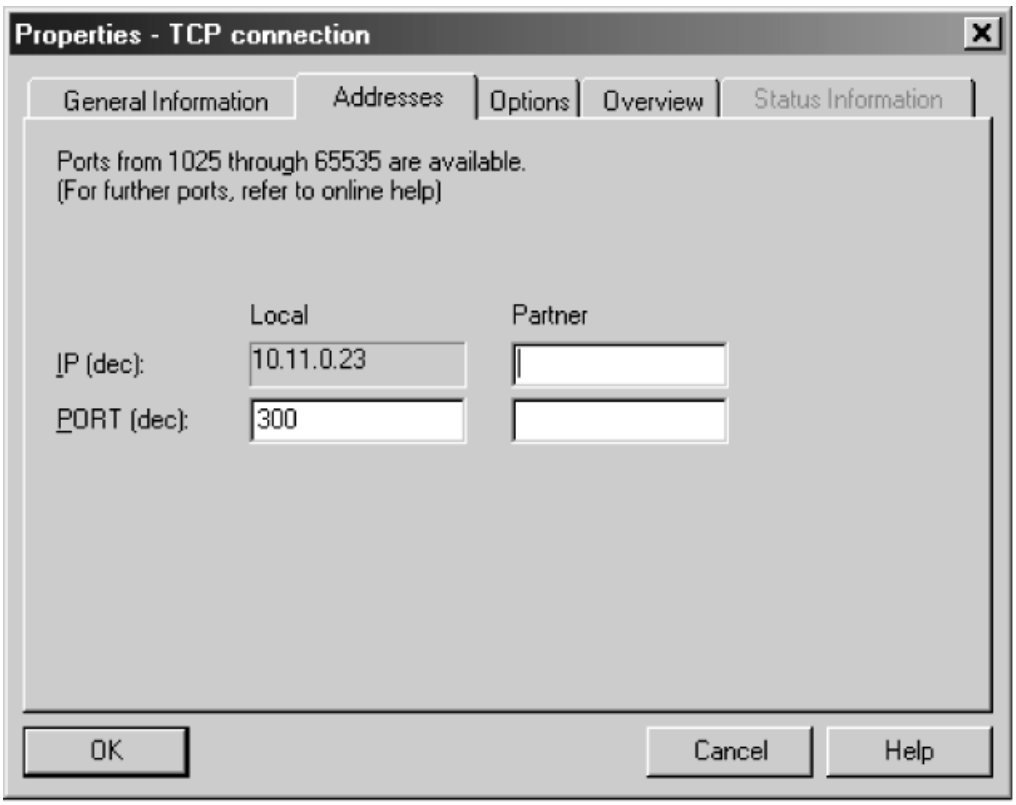
6. Select any connection ID in the "Local Endpoint" group from the dropdown menu "ID (hex)."

   Enter the name of the new TCP/IP connection (e. g. TCP-Movilink-1) in the "Name" field.

Note the following:

- The check boxes "Active connection establishment" and "Use FTP protocol" may not be activated.
- If you have configured several Ethernet CP components in the same system rack, you will have to assign the connection of the correct Ethernet CP component using the "Route" button.

7. Select the tab "Addresses."



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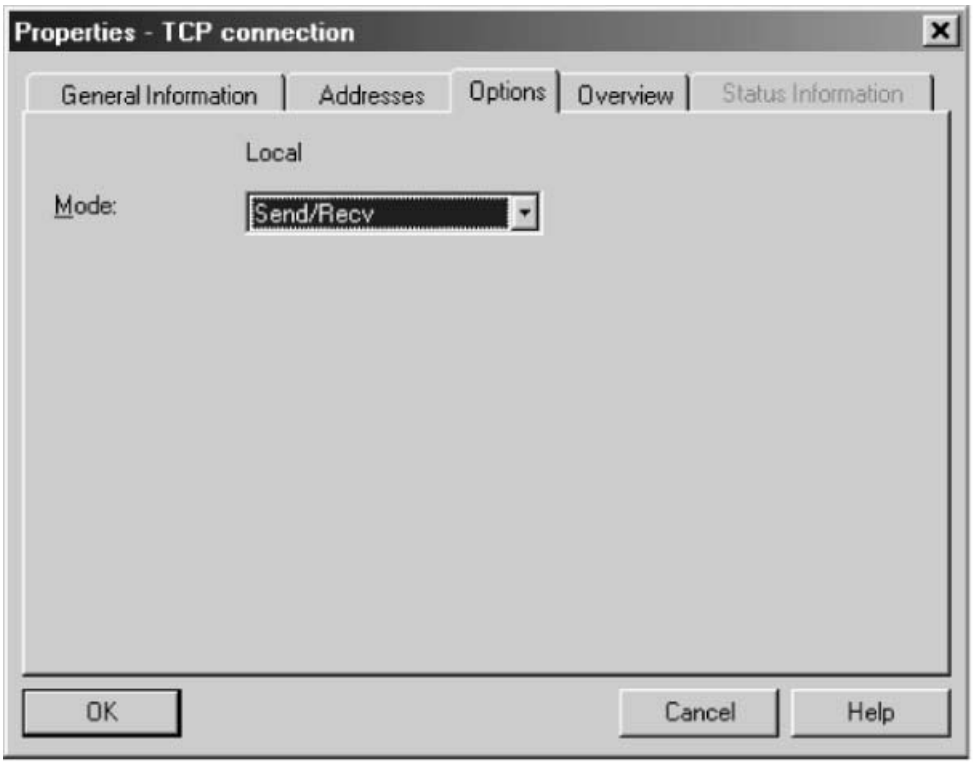
8. Enter the value "300" as local port address in the "PORT (dec)" entry field of the "Local" group; no entry is required for the "Partner" group.

9. Select the tab "Options."



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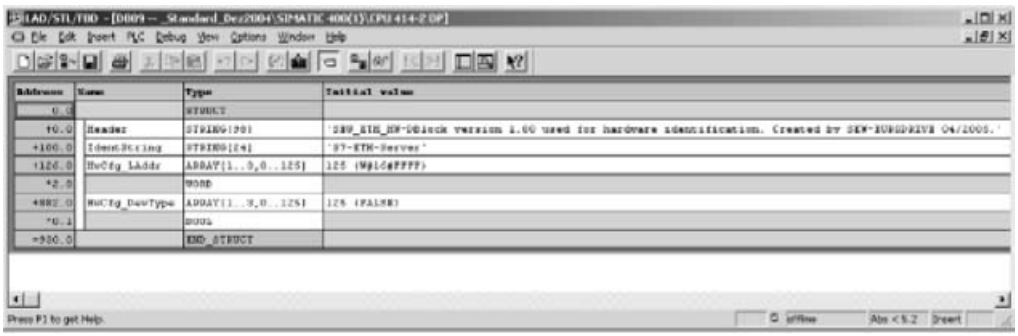
10. Select the "Send/Recv" entry in the dropdown menu "Mode."
11. Click the <OK> button. This step concludes the setup of a TCP/IP connection with STEP7.
12. Now compile the new configuration with the STEP7 program NetPro.
    To do so, click on the (Save and Compile) icon.
13. Upload the new configuration to the PLC.

3.2 Function blocks and data blocks in the PLC

You will need different function blocks and data blocks (depending on the PLC you use) for operating MOVITOOLS® via SIMATIC S7 Ethernet.

Hardware data block

A hardware data block (HDB) assigns the logical I/O address of the inverter to the displayed PROFIBUS address for MOVITOOLS® via SIMATIC S7 Ethernet. There are two-dimensional arrays and a header string (→ following figure) in this hardware data block. You can view and alter the values of the arrays in the menu item [View] / [Declaration View.]


LAD/STL/FBD - [DB89 -- Standard_Dez2004\SIMATIC 400(1)\CPU 414-2 DP]
File Edit Insert PLC Debug View Options Window Help
Address Name Type Initial value
0.0 STRUCT
+0.0 Header STRING[30] 'SEW_ETH_HW-DBlock version 1.00 used for hardware identification. Created by SEW-EURODRIVE 04/2005.'
+100.0 IdentString STRING[24] 'S7-ETH-Server'
+126.0 HwCfg_LAddr ARRAY[1..3,0..125] 125 (W#16#FFFF)
+2.0 WORD
+502.0 HwCfg_DevType ARRAY[1..3,0..125] 125 (FALSE)
+0.1 BOOL
+930.0 END_STRUCT
Press F1 to get Help.
Abs < 5.2
Insert

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- **HeaderString**

  The string is necessary for clear identification of the "SMLP server_vx.xx" function block and may not be altered.

- **IdentString**

  You can save a string of up to 24 characters to enter a user-specific identification in the PLC. Use MOVITOOLS® to retrieve this ID.

- **HwCfg_LAddr**

  Two-dimensional array with Index 1 (values 1 ... 3 are possible) mapping the DP subnet and index 2 (values 0 ... 125 are possible) describing the PROFIBUS address in the respective subnet. The value of the respective array word corresponds to the logical I/O address of the SEW unit. The value "0xFFFF" is a placeholder for non-established units and may not be used in assigning the logical I/O addresses in the STEP7 hardware configuration for SEW units.

- **HwCfg_DevType**

  Two-dimensional array with Index 1 (values 1 ... 3 are possible) mapping the DP subnet and Index 2 (values "TRUE" or "FALSE") describing the PROFIBUS address in the respective subnet. The value of the respective array bool determines if a device is addressed via the DP-V1 channel or the parameter channel saved in the cyclical data. If the value is "True", then parameters will be set via the DP-V1 channel (logical I/O address of PD data). If the value is "False," then parameters will be set via the DP channel (has to be set up in the STEP7 hardware configuration; the logical I/O address of the parameter channel in the cyclical data).

It is now possible to operate up to three PROFIBUS-DP strings on one SIMATIC S7 with the DP subnet (prerequisite: Addressing of SEW units via logical I/O address).

Make sure to set the logical OUT address to the same value as the logical IN address when configuring SEW units in the STEP7 hardware configuration.

Example for manual input of an SEW unit.

Requirements:

- MOVIDRIVE® MDX61B drive inverter with DFP21B PROFIBUS option
- Logical I/O address: 800
- PROFIBUS address: 10
- DP subnet: 2
- Parameter setting via PROFIBUS DP-V1 channel

Procedure:

1. Open the hardware data block (HDB) in STEP7. Change to data view.
2. Edit the variable *HwCfg_Laddr* [2, 10] by entering the value 800.
3. Edit the variable *HwCfg_DevType* [2, 10] by entering the value "True" for parameter setting via the PROFIBUS DP-V1 channel.
4. You can also use the `Create_HardwareDB` program from SEW-EURODRIVE (→ Section "Program "Create_HardwareDB") to create the hardware data block.

Function block SMLP-Server_Vx.xx

You need the function block *SMLP-Server_Vx.xx* to forward the MOVITOOLS® parameter services to the inverter via the PLC. The block will have to be called up cyclically in the PLC (e. g. in OB1). The *SMLP-Server_Vx.xx* function block was set up as an acyclical function block, i.e. it takes several PLC cycles until a parameter setting order is complete. If there is no parameter setting order, the block will be exited as soon as possible.

Example for call:

```
CALL "SMLP-Server_V0.01" , DB31
  ID           := 1
  LADDR        := W#16#1FF9
  Hardware_DB  := "MoviTools_Eth_HDB_V0.1"
  InstDB_SFB52 := "InstDB_SFB52"
  InstDB_SFB53 := "InstDB_SFB53"
  BUSY         := M0.0
  ERROR        := MW2
  STATUS       := MD4
  VERSION_ERR  := M0.1
```

Parameter name	Type	Interface	Description
ID	INT	IN	The parameter ID contains the connection ID of the ISO transmission connection. This information is available in the TCP connection established in NetPro. **Useful hint:** Move the mouse to the function block and click the right mouse button. Select the menu item "Connections" and select the connection you need from "NetConfig." The entries will take place automatically.
LADDR	WORD	IN	Component start address. When configuring the CP with STEP7 HWConfig, the start address of the component will be listed in the configuration table. Enter this address here. This information is available in the TCP connection established in NetPro.
Hardware_DB	Block_DB	IN	Hardware data block for addressing SEW units
InstDB_SFB52	Block_DB	IN	Instance data block for SFB53 (WRREC) and DP-V1 communication. Copy this data block from the SEW sample project or save it in your project as new instance data block for SFB52.
BUSY	BOOL	OUT	**TRUE:** Parameter exchange between MOVITOOLS® and SEW inverter is active. There may be no other parameter access taking place between the S7 application program and an SEW inverter during this time period. **FALSE:** No parameter exchange between MOVITOOLS® and SEW inverter.
ERROR	BOOL	OUT	• Value = 0: No error • Value = 1: AG_LRECV or AG_LSEND error • Value = 2: SFC14/15 error • Value = 3: SFB52/53 error • Value = 4: SFC20 error **Note:** If there is no established TCP/IP connection between MOVITOOLS® and SIMATIC S7, you will receive an error message (value = 1, status = 8304hex).
STATUS	DWORD	OUT	The return value will include an error code if an error occurs during processing of the function. Replace this error code with the error word in context. Use the STEP7 online help to evaluate the error code.
VERSION_ERR	BOOL	OUT	**TRUE:** There is a version conflict between *FC_MoviTools*, HDB and CDB, i. e. the components do not have the same version number. Remedy: Install components with identical version number in PLC. **FALSE:** There is no version conflict.

The *SMLP-Server_Vx.xx* function block needs two functions that are added to the STEP7 project depending on the PLC for sending and receiving data via the Ethernet component. These are the standard library functions FC50 "AG_LSEND" and FC60 "AG_LRECV" for the SIMATIC S7-400 components or FC5 "AG_SEND" and FC6 2AG_RECV" for the SIMATIC S7-300 components. You can copy these components for the specific PLC from the Siemens standard library SIMATIC_NET_CP and add them to the STEP7 project.

Use other functions for the SIMATIC S7-400 components than for the SIMATIC S7-300 components. Make sure to always use the latest version of blocks available in the SIMATIC_NET_CP library.

The callups for the following functions are permanently saved in the "SMLP-Server_Vxxx" function block:

- AG_SEND
- AG_RECV
- AG_LSEND
- AG_LRECV

The following variants were implemented in the S7 projects to make for variable connection.

SIMATIC S7300 component		
		Release as of version
SMLP-Server (FC5_FC6)	FC5 = AG_SEND FC6 = AG_RECV	4.1 4.6
SMLP-Server (FC50_FC60)	FC50 = AG_SEND FC60 = AG_RECV	4.1 4.6
SMLP-Server (FC24_FC25)	FC24 = AG_SEND FC25 = AG_RECV	4.1 4.6
SMLP-Server (F324_FC325)	FC324 = AG_SEND FC325 = AG_RECV	4.1 4.6
SMLP-Server (FC1024_FC1025)	FC1024 = AG_SEND FC1025 = AG_RECV	4.1 4.6

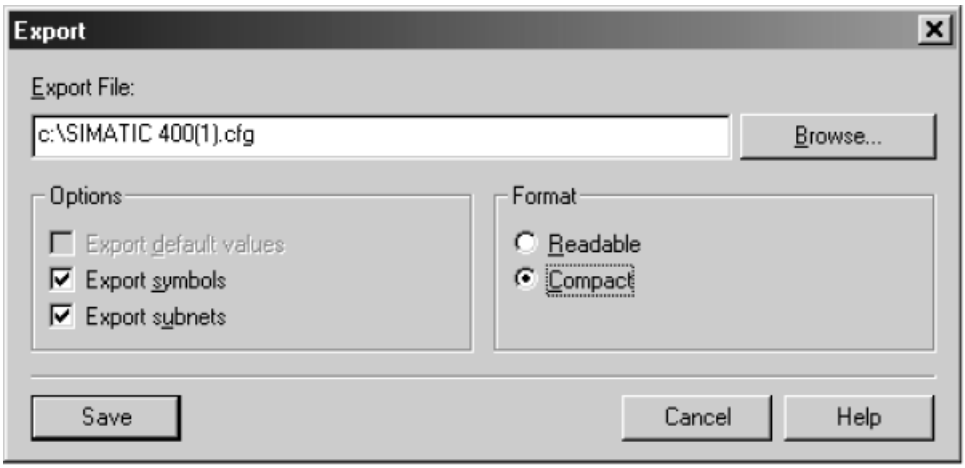
SIMATIC S7400 component		
		Release as of version
SMLP-Server (FC5_FC6)	FC5 = AG_LSEND FC6 = AG_LRECV	3.0
SMLP-Server (FC50_FC60)	FC50 = AG_LSEND FC60 = AG_LRECV	
SMLP-Server (FC24_FC25)	FC24 = AG_LSEND FC25 = AG_LRECV	
SMLP-Server (F324_FC325)	FC324 = AG_LSEND FC325 = AG_LRECV	
SMLP-Server (FC1024_FC1025)	FC1024 = AG_LSEND FC1025 = AG_LRECV	

4 "Create_HardwareDB" Program

The "Create_HardwareDB" program is a Windows® based program to create a STEP7 project-specific AWL source that can be imported as hardware data block in STEP7. This section covers the handling of the "Create_HardwareDB" program and importing the AWL source in STEP7 to create a project-specific hardware data block (HDB).

4.1 Exporting the hardware configuration from the STEP7 project

You will have to export the hardware configuration from STEP7 to create a STEP7 project-specific HDB. To do so, open the window "Export" in the STEP7 hardware configuration via the menu item [File] / [Export] (→ following figure).



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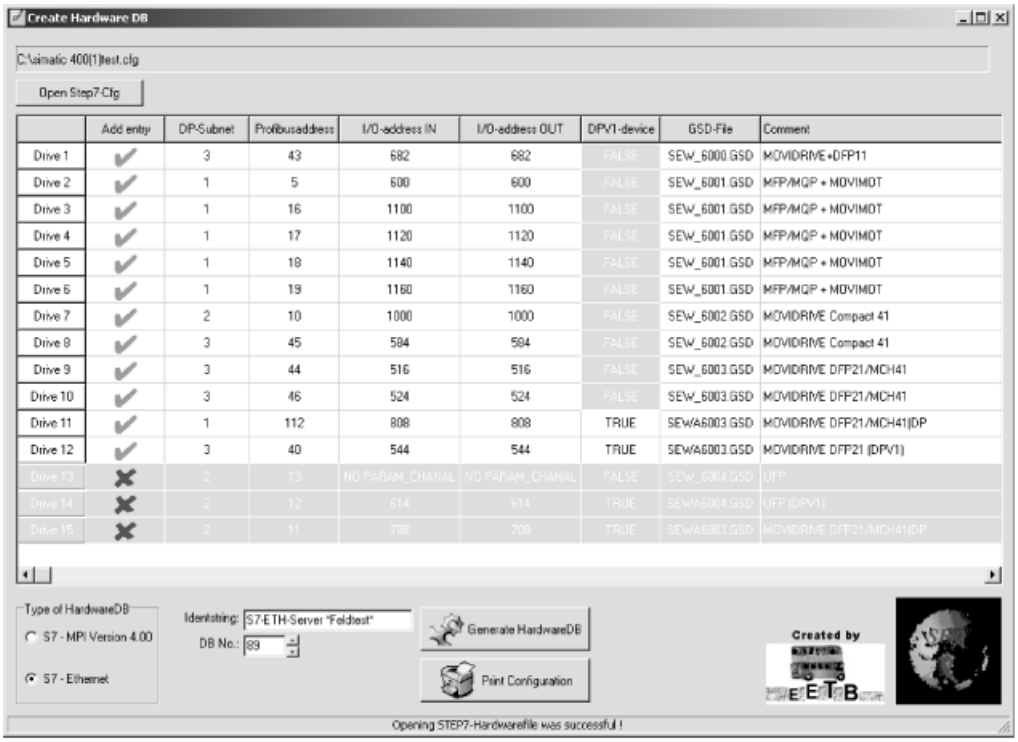
- Make sure that the "Compact" option is marked in the "Format" group and that the "Export symbols" and "Export subnets" check boxes are activated in the "Options" group.

The exported configuration files have to be created with STEP7 as of version 5.2 and be in file version 3.1.

4.2 Creating a hardware data block with "Create_HardwareDB"

The configuration file exported from STEP7 can be uploaded with the "Create_HardwareDB" program (→ following figure).


Create Hardware DB
C:\simatic 400(1)\test.cfg
Open Step7-Cfg
Add entry
DP-Subnet
Profibusaddress
I/O-address IN
I/O-address OUT
DPV1-device
GSD-File
Comment
Drive 1 3 43 682 682 FALSE SEW_6000.GSD MOVIDRIVE+DFP11
Drive 2 1 5 600 600 FALSE SEW_6001.GSD MFP/MQP + MOVIMOT
Drive 3 1 16 1100 1100 FALSE SEW_6001.GSD MFP/MQP + MOVIMOT
Drive 4 1 17 1120 1120 FALSE SEW_6001.GSD MFP/MQP + MOVIMOT
Drive 5 1 18 1140 1140 FALSE SEW_6001.GSD MFP/MQP + MOVIMOT
Drive 6 1 19 1160 1160 FALSE SEW_6001.GSD MFP/MQP + MOVIMOT
Drive 7 2 10 1000 1000 FALSE SEW_6002.GSD MOVIDRIVE Compact 41
Drive 8 3 45 584 584 FALSE SEW_6002.GSD MOVIDRIVE Compact 41
Drive 9 3 44 516 516 FALSE SEW_6003.GSD MOVIDRIVE DFP21/MCH41
Drive 10 3 46 524 524 FALSE SEW_6003.GSD MOVIDRIVE DFP21/MCH41
Drive 11 1 112 808 808 TRUE SEWA6003.GSD MOVIDRIVE DFP21/MCH41|DP
Drive 12 3 40 544 544 TRUE SEWA6003.GSD MOVIDRIVE DFP21 (DPV1)
Drive 13 2 13 NO PARAM_CHANAL NO PARAM_CHANAL FALSE SEW_6004.GSD UFP
Drive 14 2 12 614 614 TRUE SEWA6004.GSD UFP (DPV1)
Drive 15 2 11 708 708 TRUE SEWA6003.GSD MOVIDRIVE DFP21/MCH41|DP
Type of HardwareDB
S7 - MPI Version 4.00
S7 - Ethernet
Identstring: S7-ETH-Server "Feldtest"
DB No.: 89
Generate HardwareDB
Print Configuration
Created by
Opening STEP7-Hardwarefile was successful !

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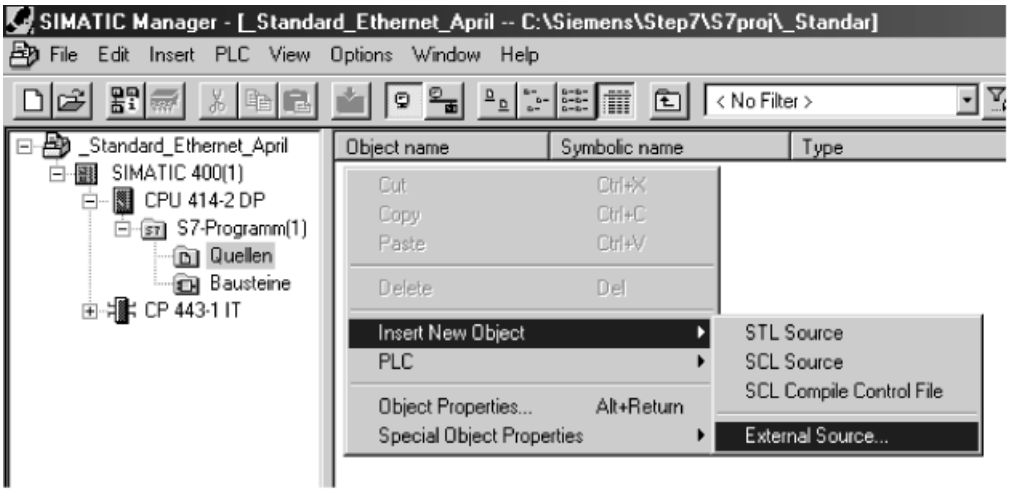
1. Click the <Open Step7-Cfg> button to open the configuration file. All SEW units will be displayed in the list field.
2. You can deselect SEW units with the "Disabled" setting from the unit list of the hardware data block you want to create.
3. Use the "DPV1-Device" column to determine if you want to configure the units via the PROFIBUS-DP or PROFIBUS-DP-V1 parameter channel. The PLC type is not evaluated, i.e. you have to know if your PLC supports PROFIBUS DP-V1 and make the corresponding settings.
4. Set the number of the hardware data block you want to create in the entry field "DB No."
5. You can enter an identification code with up to 24 characters (e.g. S7-ETH-Server "Field test") in the "Identstring" entry field for clear identification of the hardware data block in MOVITOOLS®.
6. Use the "Type of HardwareDB" group to determine if you want to create a HDB for MOVITOOLS® via S7 Ethernet ("S7 Ethernet" option) or for MOVITOOLS® via MPI ("S7 MPI version 4.00" option).
7. Finish by clicking on the <Generate HardwareDB> button to create the AWL source for STEP7.

8. Open the STEP7 manager and mark the "Sources" program item to import the AWL source of the hardware data block (→ following figure). Click the right mouse button and select the menu item [Insert New Object] / [External Source.]



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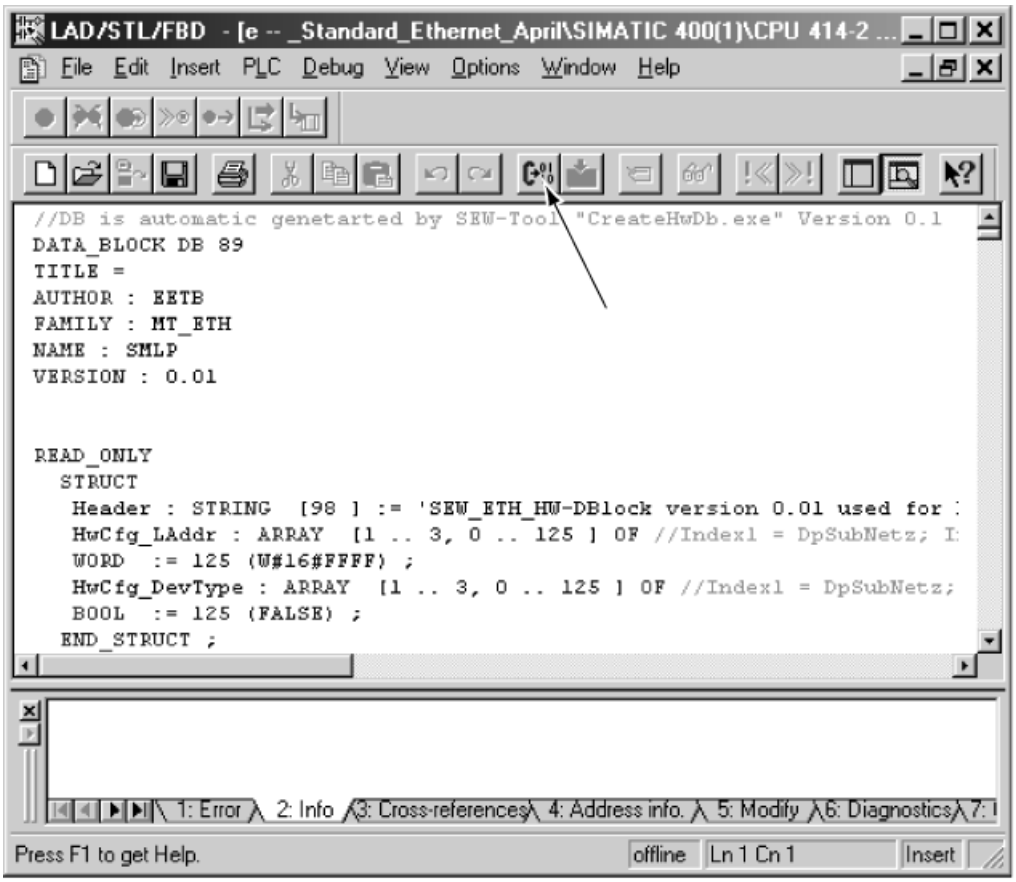
9. Open the AWL source and compile it. To do so, click on the "Compile" icon (→ following figure).


LAD/STL/FBD - [e -- _Standard_Ethernet_April\SIMATIC 400(1)\CPU 414-2 ...
File Edit Insert PLC Debug View Options Window Help
//DB is automatic genetarted by SEW-Tool "CreateHwDb.exe" Version 0.1
DATA_BLOCK DB 89
TITLE =
AUTHOR : EETB
FAMILY : MT_ETH
NAME : SMLP
VERSION : 0.01
READ_ONLY
STRUCT
Header : STRING [98] := 'SEW_ETH_HW-DBlock version 0.01 used for
HwCfg_LAddr : ARRAY [1 .. 3, 0 .. 125] OF //Index1 = DpSubNetz; I:
WORD := 125 (W#16#FFFF) ;
HwCfg_DevType : ARRAY [1 .. 3, 0 .. 125] OF //Index1 = DpSubNetz;
BOOL := 125 (FALSE) ;
END_STRUCT ;
1: Error 2: Info 3: Cross-references 4: Address info. 5: Modify 6: Diagnostics
Press F1 to get Help.
offline
Ln 1 Cn 1
Insert

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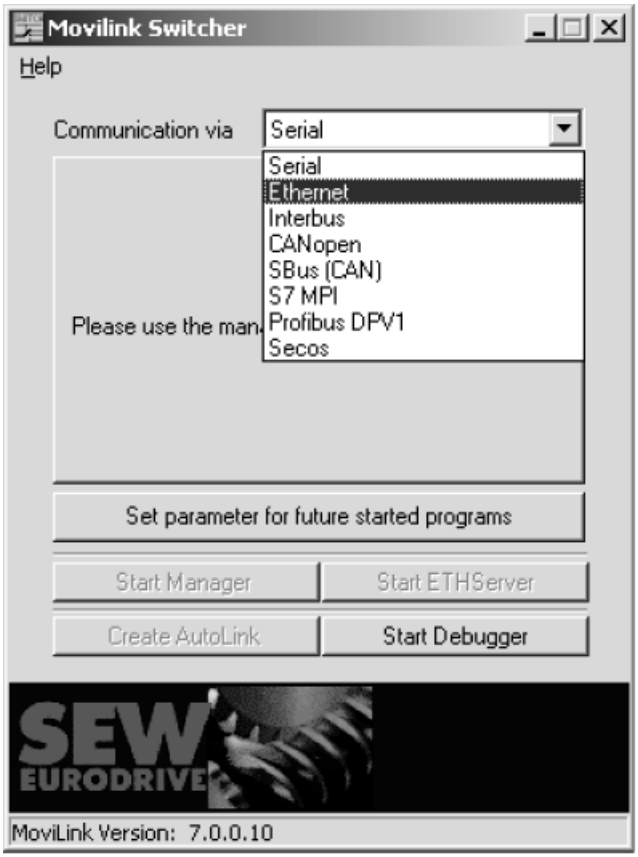
5 Starting MOVITOOLS®

5.1 Starting MOVITOOLS® with the MoviLinkSwitcher tool

You will have to start the `MoviLinkSwitcher` tool from the start menu prior to starting the MOVITOOLS® Manager. This step will set the communication connection from MOVITOOLS® to the Ethernet fieldbus interface (→ following figure).



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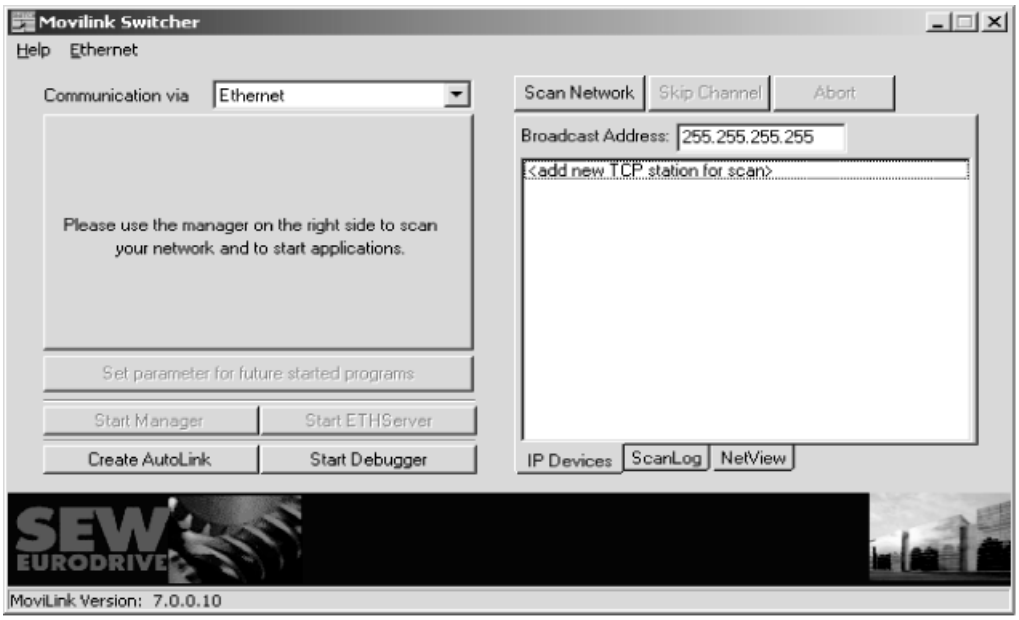
- Select "Ethernet" as communication channel from the "Communication via" selection field.



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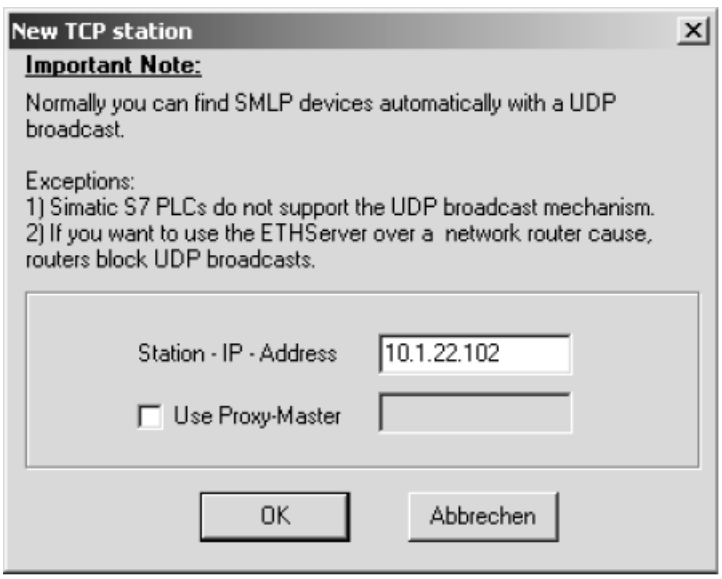
- Highlight the entry "Add new TCP station for scan." Double-click the marked entry to open the "New TCP Station" window.


New TCP station
Important Note:
Normally you can find SMLP devices automatically with a UDP broadcast.
Exceptions:
1) Simatic S7 PLCs do not support the UDP broadcast mechanism.
2) If you want to use the ETHServer over a network router cause, routers block UDP broadcasts.
Station - IP - Address
10.1.22.102
Use Proxy-Master
OK
Abbrechen

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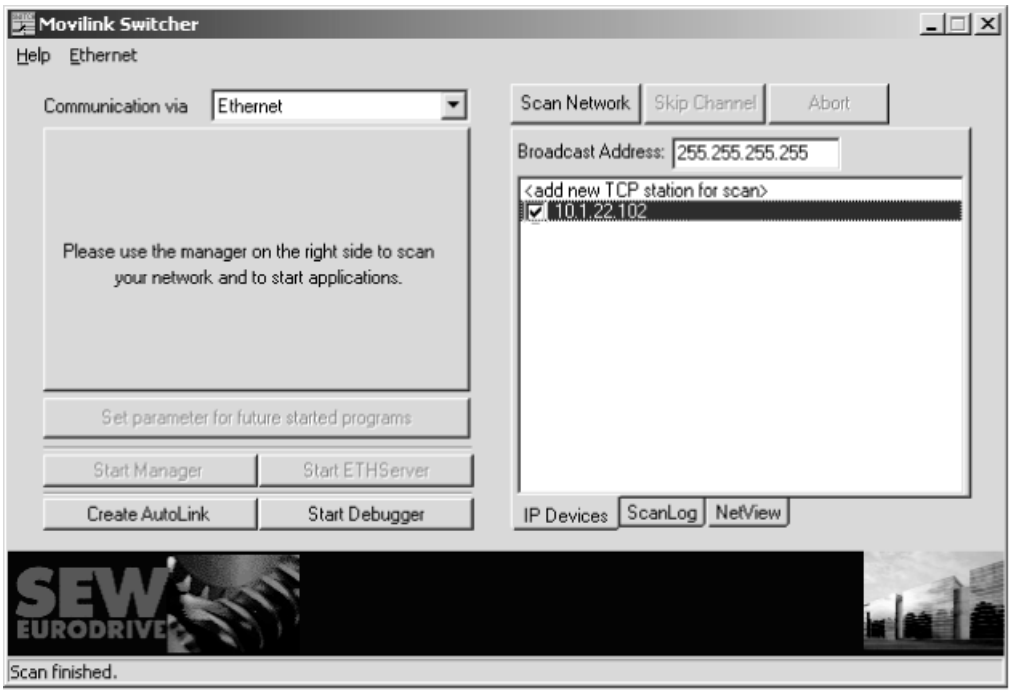
- Enter the IP address of your Ethernet CP in the "Station-IP-Address" entry field. Next, click <OK>. This step will call up the "Movilink Switcher" window once again.



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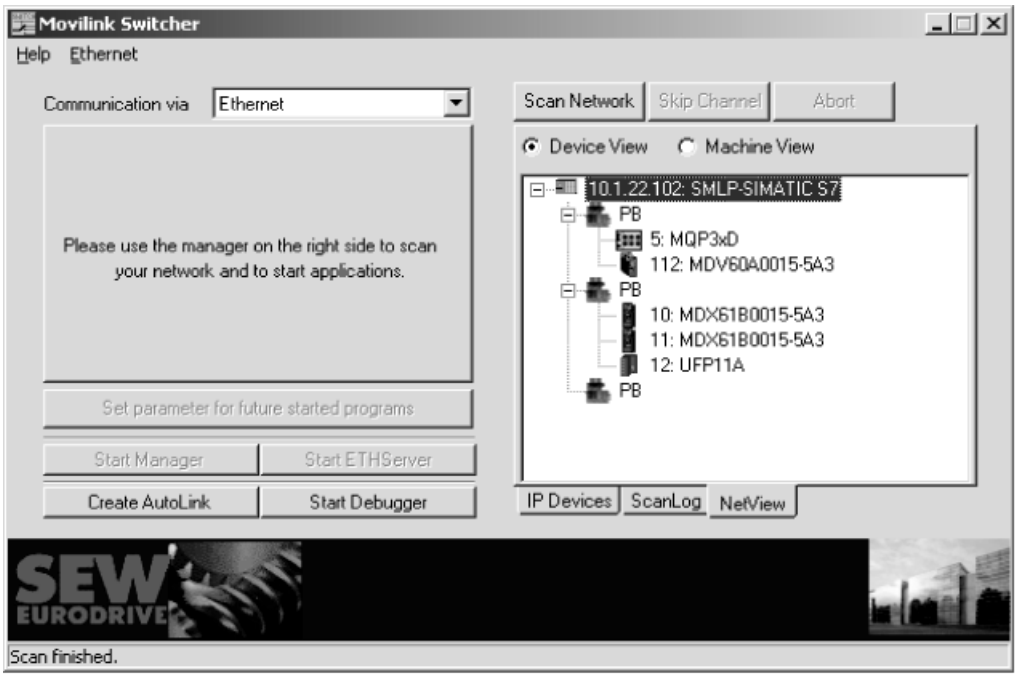
- Mark the IP address of the new PLC station. Click the button "Scan Network." All SEW units connected to the PLC will be displayed (→ following figure).



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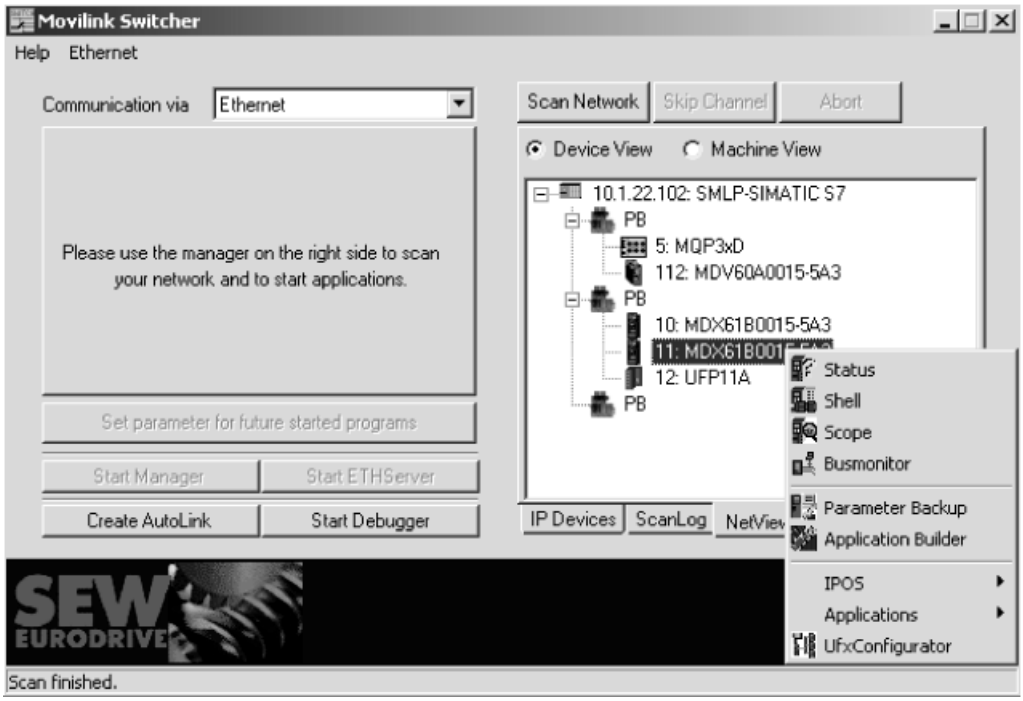
- Select the tab "NetView."



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- Highlight a unit in the list and click the right mouse button. The context menu opens. Select the MOVITOOLS® application you need from the context menu.

You will find additional information in the online help for Movilink Switcher.

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Address List

Germany			
Headquarters **Production** **Sales**	**Bruchsal**	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 D-76646 Bruchsal P.O. Box Postfach 3023 · D-76642 Bruchsal	Tel. +49 7251 75-0 Fax +49 7251 75-1970 http://www.sew-eurodrive.de sew@sew-eurodrive.de
Service **Competence Center**	**Central** Gear units / Motors	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 1 D-76676 Graben-Neudorf	Tel. +49 7251 75-1710 Fax +49 7251 75-1711 sc-mitte-gm@sew-eurodrive.de
	Central Electronics	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 D-76646 Bruchsal	Tel. +49 7251 75-1780 Fax +49 7251 75-1769 sc-mitte-e@sew-eurodrive.de
	North	SEW-EURODRIVE GmbH & Co KG Alte Ricklinger Straße 40-42 D-30823 Garbsen (near Hannover)	Tel. +49 5137 8798-30 Fax +49 5137 8798-55 sc-nord@sew-eurodrive.de
	East	SEW-EURODRIVE GmbH & Co KG Dänkritzer Weg 1 D-08393 Meerane (near Zwickau)	Tel. +49 3764 7606-0 Fax +49 3764 7606-30 sc-ost@sew-eurodrive.de
	South	SEW-EURODRIVE GmbH & Co KG Domagkstraße 5 D-85551 Kirchheim (near München)	Tel. +49 89 909552-10 Fax +49 89 909552-50 sc-sued@sew-eurodrive.de
	West	SEW-EURODRIVE GmbH & Co KG Siemensstraße 1 D-40764 Langenfeld (near Düsseldorf)	Tel. +49 2173 8507-30 Fax +49 2173 8507-55 sc-west@sew-eurodrive.de
	Drive Service Hotline / 24 Hour Service		+49 180 5 SEWHELP +49 180 5 7394357
	Additional addresses for service in Germany provided on request!		

France			
Production **Sales** **Service**	**Haguenau**	SEW-USOCOME 48-54, route de Soufflenheim B. P. 20185 F-67506 Haguenau Cedex	Tel. +33 3 88 73 67 00 Fax +33 3 88 73 66 00 http://www.usocome.com sew@usocome.com
Assembly **Sales** **Service**	**Bordeaux**	SEW-USOCOME Parc d'activités de Magellan 62, avenue de Magellan - B. P. 182 F-33607 Pessac Cedex	Tel. +33 5 57 26 39 00 Fax +33 5 57 26 39 09
	Lyon	SEW-USOCOME Parc d'Affaires Roosevelt Rue Jacques Tati F-69120 Vaulx en Velin	Tel. +33 4 72 15 37 00 Fax +33 4 72 15 37 15
	Paris	SEW-USOCOME Zone industrielle 2, rue Denis Papin F-77390 Verneuil l'Etang	Tel. +33 1 64 42 40 80 Fax +33 1 64 42 40 88
	Additional addresses for service in France provided on request!		

Algeria			
Sales	**Alger**	Réducom 16, rue des Frères Zaghnoun Bellevue El-Harrach 16200 Alger	Tel. +213 21 8222-84 Fax +213 21 8222-84

Argentina			
Assembly **Sales** **Service**	**Buenos Aires**	SEW EURODRIVE ARGENTINA S.A. Centro Industrial Garin, Lote 35 Ruta Panamericana Km 37,5 1619 Garin	Tel. +54 3327 4572-84 Fax +54 3327 4572-21 sewar@sew-eurodrive.com.ar

Australia			
Assembly **Sales** **Service**	**Melbourne**	SEW-EURODRIVE PTY. LTD. 27 Beverage Drive Tullamarine, Victoria 3043	Tel. +61 3 9933-1000 Fax +61 3 9933-1003 http://www.sew-eurodrive.com.au enquires@sew-eurodrive.com.au
	Sydney	SEW-EURODRIVE PTY. LTD. 9, Sleigh Place, Wetherill Park New South Wales, 2164	Tel. +61 2 9725-9900 Fax +61 2 9725-9905 enquires@sew-eurodrive.com.au

Austria			
Assembly **Sales** **Service**	**Wien**	SEW-EURODRIVE Ges.m.b.H. Richard-Strauss-Strasse 24 A-1230 Wien	Tel. +43 1 617 55 00-0 Fax +43 1 617 55 00-30 http://sew-eurodrive.at sew@sew-eurodrive.at

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Assembly **Sales** **Service**	**Brüssel**	SEW Caron-Vector S.A. Avenue Eiffel 5 B-1300 Wavre	Tel. +32 10 231-311 Fax +32 10 231-336 http://www.caron-vector.be info@caron-vector.be

Brazil			
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	Additional addresses for service in Brazil provided on request!		

Bulgaria			
Sales	**Sofia**	BEVER-DRIVE GmbH Bogdanovetz Str.1 BG-1606 Sofia	Tel. +359 2 9532565 Fax +359 2 9549345 bever@fastbg.net

Cameroon			
Sales	**Douala**	Electro-Services Rue Drouot Akwa B.P. 2024 Douala	Tel. +237 4322-99 Fax +237 4277-03

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	Vancouver	SEW-EURODRIVE CO. OF CANADA LTD. 7188 Honeyman Street Delta. B.C. V4G 1 E2	Tel. +1 604 946-5535 Fax +1 604 946-2513 b.wake@sew-eurodrive.ca
	Montreal	SEW-EURODRIVE CO. OF CANADA LTD. 2555 Rue Leger Street LaSalle, Quebec H8N 2V9	Tel. +1 514 367-1124 Fax +1 514 367-3677 a.peluso@sew-eurodrive.ca
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China			
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China			
Assembly **Sales** **Service**	**Suzhou**	SEW-EURODRIVE (Suzhou) Co., Ltd. 333, Suhong Middle Road Suzhou Industrial Park Jiangsu Province, 215021 P. R. China	Tel. +86 512 62581781 Fax +86 512 62581783 suzhou@sew.com.cn

Colombia			
Assembly **Sales** **Service**	**Bogotá**	SEW-EURODRIVE COLOMBIA LTDA. Calle 22 No. 132-60 Bodega 6, Manzana B Santafé de Bogotá	Tel. +57 1 54750-50 Fax +57 1 54750-44 sewcol@sew-eurodrive.com.co

Croatia			
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Czech Republic			
Sales	**Praha**	SEW-EURODRIVE CZ S.R.O. Business Centrum Praha Luná 591 CZ-16000 Praha 6 - Vokovice	Tel. +420 a220121236 Fax +420 220121237 http://www.sew-eurodrive.cz sew@sew-eurodrive.cz

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Assembly **Sales** **Service**	**Kopenhagen**	SEW-EURODRIVEA/S Geminivej 28-30, P.O. Box 100 DK-2670 Greve	Tel. +45 43 9585-00 Fax +45 43 9585-09 http://www.sew-eurodrive.dk sew@sew-eurodrive.dk

Estonia			
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Finland			
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	Mumbai	SEW-EURODRIVE India Private Limited 312 A, 3rd Floor, Acme Plaza Andheri Kurla Road, Andheri (E) Mumbai	Tel. +91 22 28348440 Fax +91 22 28217858 salesmumbai@seweurodriveindia.com

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Israel			
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Lithuania			
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Mexico			
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	Christchurch	SEW-EURODRIVE NEW ZEALAND LTD. 10 Settlers Crescent, Ferrymead Christchurch	Tel. +64 3 384-6251 Fax +64 3 384-6455 sales@sew-eurodrive.co.nz

Norway			
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Peru			
Assembly **Sales** **Service**	**Lima**	SEW DEL PERU MOTORES REDUCTORES S.A.C. Los Calderos, 120-124 Urbanizacion Industrial Vulcano, ATE, Lima	Tel. +51 1 3495280 Fax +51 1 3493002 sewperu@sew-eurodrive.com.pe

Poland			
Assembly **Sales** **Service**	**Lodz**	SEW-EURODRIVE Polska Sp.z.o.o. ul. Techniczna 5 PL-92-518 Lodz	Tel. +48 42 67710-90 Fax +48 42 67710-99 http://www.sew-eurodrive.pl sew@sew-eurodrive.pl

Portugal			
Assembly **Sales** **Service**	**Coimbra**	SEW-EURODRIVE, LDA. Apartado 15 P-3050-901 Mealhada	Tel. +351 231 20 9670 Fax +351 231 20 3685 http://www.sew-eurodrive.pt infosew@sew-eurodrive.pt

Romania			
Sales **Service**	**Bucuresti**	Sialco Trading SRL str. Madrid nr.4 011785 Bucuresti	Tel. +40 21 230-1328 Fax +40 21 230-7170 sialco@sialco.ro

Russia			
Assembly **Sales** **Service**	**St. Petersburg**	ZAO SEW-EURODRIVE P.O. Box 36 195220 St. Petersburg Russia	Tel. +7 812 3332522 +7 812 5357142 Fax +7 812 3332523 http://www.sew-eurodrive.ru sew@sew-eurodrive.ru

Senegal			
Sales	**Dakar**	SENEMECA Mécanique Générale Km 8, Route de Rufisque B.P. 3251, Dakar	Tel. +221 849 47-70 Fax +221 849 47-71 senemeca@sentoo.sn

Serbia and Montenegro			
Sales	**Beograd**	DIPAR d.o.o. Kajmakcalanska 54 SCG-11000 Beograd	Tel. +381 11 3088677 / +381 11 3088678 Fax +381 11 3809380 dipar@yubc.net

Singapore			
Assembly **Sales** **Service**	**Singapore**	SEW-EURODRIVE PTE. LTD. No 9, Tuas Drive 2 Jurong Industrial Estate Singapore 638644	Tel. +65 68621701 Fax +65 68612827 sewsingapore@sew-eurodrive.com

Slovakia			
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Slovenia			
Sales **Service**	**Celje**	Pakman - Pogonska Tehnika d.o.o. UI. XIV. divizije 14 SLO – 3000 Celje	Tel. +386 3 490 83-20 Fax +386 3 490 83-21 pakman@siol.net

South Africa			
Assembly **Sales** **Service**	**Johannesburg**	SEW-EURODRIVE (PROPRIETARY) LIMITED Eurodrive House Cnr. Adcock Ingram and Aerodrome Roads Aeroton Ext. 2 Johannesburg 2013 P.O.Box 90004 Bertsham 2013	Tel. +27 11 248-7000 Fax +27 11 494-3104 dross@sew.co.za
	Capetown	SEW-EURODRIVE (PROPRIETARY) LIMITED Rainbow Park Cnr. Racecourse & Omuramba Road Montague Gardens Cape Town P.O.Box 36556 Chempet 7442 Cape Town	Tel. +27 21 552-9820 Fax +27 21 552-9830 Telex 576 062 dswanepoel@sew.co.za
	Durban	SEW-EURODRIVE (PROPRIETARY) LIMITED 2 Monaceo Place Pinetown Durban P.O. Box 10433, Ashwood 3605	Tel. +27 31 700-3451 Fax +27 31 700-3847 dtait@sew.co.za

Spain			
Assembly **Sales** **Service**	**Bilbao**	SEW-EURODRIVE ESPAÑA, S.L. Parque Tecnológico, Edificio, 302 E-48170 Zamudio (Vizcaya)	Tel. +34 9 4431 84-70 Fax +34 9 4431 84-71 sew.spain@sew-eurodrive.es

Sweden			
Assembly **Sales** **Service**	**Jönköping**	SEW-EURODRIVE AB Gnejsvägen 6-8 S-55303 Jönköping Box 3100 S-55003 Jönköping	Tel. +46 36 3442-00 Fax +46 36 3442-80 http://www.sew-eurodrive.se info@sew-eurodrive.se

Switzerland			
Assembly **Sales** **Service**	**Basel**	Alfred Imhof A.G. Jurastrasse 10 CH-4142 Münchenstein bei Basel	Tel. +41 61 41717-17 Fax +41 61 41717-00 http://www.imhof-sew.ch info@imhof-sew.ch

Thailand			
Assembly **Sales** **Service**	**Chon Buri**	SEW-EURODRIVE (Thailand) Ltd. Bangpakong Industrial Park 2 700/456, Moo.7, Tambol Donhuaroh Muang District Chon Buri 20000	Tel. +66 38 454281 Fax +66 38 454288 sewthailand@sew-eurodrive.co.th

Tunisia			
Sales	**Tunis**	T. M.S. Technic Marketing Service 7, rue Ibn EI Heithem Z.I. SMMT 2014 Mégrine Erriadh	Tel. +216 1 4340-64 + 1 4320-29 Fax +216 1 4329-76

Turkey			
Assembly **Sales** **Service**	**Istanbul**	SEW-EURODRIVE Hareket Sistemleri Sirketi Bagdat Cad. Koruma Cikmazi No. 3 TR-34846 Maltepe ISTANBUL	Tel. +90 216 4419163 + 216 4419164 + 216 3838014 Fax +90 216 3055867 sew@sew-eurodrive.com.tr

Ukraine			
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USA			
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	Philadelphia/PA	SEW-EURODRIVE INC. Pureland Ind. Complex 2107 High Hill Road, P.O. Box 481 Bridgeport, New Jersey 08014	Tel. +1 856 467-2277 Fax +1 856 845-3179 csbridgeport@seweurodrive.com
	Dayton	SEW-EURODRIVE INC. 2001 West Main Street Troy, Ohio 45373	Tel. +1 937 335-0036 Fax +1 937 440-3799 cstroy@seweurodrive.com
	Dallas	SEW-EURODRIVE INC. 3950 Platinum Way Dallas, Texas 75237	Tel. +1 214 330-4824 Fax +1 214 330-4724 csdallas@seweurodrive.com
	Additional addresses for service in the USA provided on request!		

Venezuela			
Assembly **Sales** **Service**	**Valencia**	SEW-EURODRIVE Venezuela S.A. Av. Norte Sur No. 3, Galpon 84-319 Zona Industrial Municipal Norte Valencia, Estado Carabobo	Tel. +58 241 832-9804 Fax +58 241 838-6275 sewventas@cantv.net sewfinanzas@cantv.net

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